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Status of Cryo Detector Lab at the IFK Jena

The Institute of Solid State Physics (IFK) at the University of Jena has a long tradition making detectors and using low temperatures for high-sensitive measurements. An own helium liquefier with a production capacity of 20 l/h enables the development and validation larger detector systems. In cooperation with the Helmholtz Institute Jena (HI-Jena) and the Leibniz Institute of Photonic Technology (IPHT) the capabilities of the Cryo Detector Lab could be extended. Large samples with a diameter of up to 350 mm can be measured at low temperatures down to 1.8 K in a wide neck bath cryostat. The institute is equipped with a magnetically and acoustically shield-ed chamber (3 m x 2 m x 2.5 m) and a laboratory (5.5 m x 3.5 m x 3 m) with high current coils which can generate defined magnetic field components or suppress a magnetic interference field with an active compensation system. Furthermore, building vibrations can be measured and actively suppressed by a compensation system for pay loads up to 800 kg.

This work will show the measure and testing capabilities of the Cryo Detector Lab on the example of a large Cryogenic Current Comparator (CCC).

Primary author: Prof. SCHMIDL, Frank (Friedrich-Schiller-university Jena, Institute of Solid State Physics)

Co-authors: Mr RITSCHER, Fabian (FSU Jena, Institute of Solid State Physics); Prof. SCHMIDT, Heidemarie (Leibniz Institute of Photonic Technology); Ms GÖLM, Jessica (FSU Jena, Institute of Solid State Physics); Dr SCHMELZ, Matthias (Leibniz Institute of Photonic Technology); Mr THÜRK, Matthias (FSU Jena, Institute of Solid State Physics); Prof. SEIDEL, Paul (FSU Jena, Institute of Solid State Physics); Dr STOLZ, Ronny (Leibniz Institute of Photonic Technology); Prof. STÖHLKER, Thomas (Helmholtz Institute Jena); Dr TYMPEL, Volker (Helmholtz Institute Jena); Dr ZAKOSARENKO, Vyacheslav (Leibniz Institute of Photonic Technology)

Presenters: Mr RITSCHER, Fabian (FSU Jena, Institute of Solid State Physics); Prof. SCHMIDL, Frank (Friedrich-Schiller-university Jena, Institute of Solid State Physics)

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